TRILOBITES

OF THE

SHALES OF THE HUDSON-RIVER GROUP.

The Trilobites most common in the shales of the Hudson-river group are *Triarthrus beckii* and *Calymene senaria* = *C. blumenbachii?* I have likewise described two species of *Olenus* in the first volume of the Palæontology of New-York ; but these are rare in most localities of the rocks of this period.

Some years since, during the progress of the Geological Survey of Vermont by Rev. Z. Thompson, some specimens of Trilobites were obtained from the shales of this age in the town of Georgia; and these were subsequently placed in my hands. The Survey having since passed under the direction of Professor Hitchcock, I postponed the publication of the descriptions, fearing it might not be agreeable to him; but having now not only his approval, but his express desire that I would publish them, I give below the following species, preliminary to a more complete description and illustration.

Olenus thompsoni (n. s.).

General form ovate, the length and breadth being nearly as six to five. Head broad lunate, with the postero-lateral angles much extended ; the width from the centre to the outer margin of the eye almost equal to the width of the cheek. Eyes (which are much crushed in the specimen) elongate semioval, equal in length to the space between the anterior angles and the frontal margin : glabella distinctly lobed, narrower in front. Thorax with the lateral lobes about once and a half as wide as the middle lobe, consisting of fourteen articulations, the third one of which is much longer than the others, and curving downwards with an extension reaching as far as the line of articulation of the seventh rib. The posterior articulations are bent abruptly backwards, so that the free extremities are parallel with the axis. Pygidium small, pointed, without visible rings, and having a narrow ridge running down the centre.

The description is chiefly drawn from an impression in slate, and a cast made from the same, together with some fragments of the same species.

Geological position. In the shales in the upper part of the Hudson-river group.

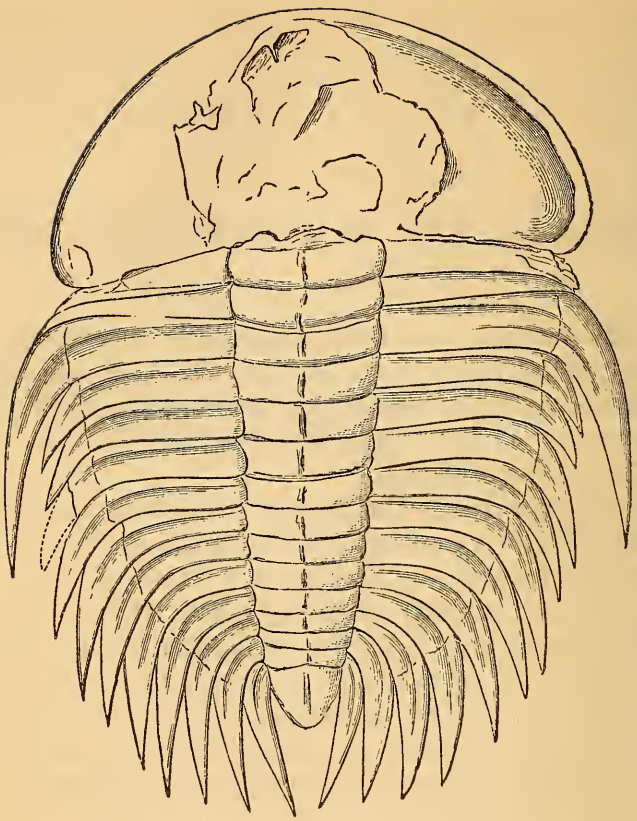

Fig. 1. Olenus thompsoni.

Olenus vermontana (n. s.).

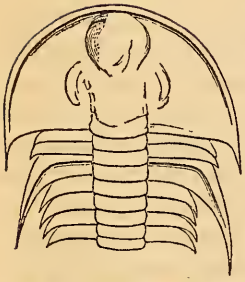

Fig. 2. Olenus vermontana.

General form elongate : the posterior extremity obtuse. Head semioval, twice as wide as long, the posterior angles produced in short acute spines. Eyes narrow elongate ; the space from the centre of the head to the outer margin of the eye much greater than the cheek, and the distance from the anterior angle of the eye to the frontal margin less than the length of the eye. Glabella lobed : hypostoma broad oval.

Thorax imperfect, preserving six articulations and part of the seventh ; the middle lobe wider than the lateral ones. The third articulation is much broader towards and at its lateral margin, and is prolonged obliquely downwards in a sharp spine, which reaches below the seventh articulation : the lateral extremities of the other articulations produced in short acute spines.

Another fragment, which is apparently of the same species, preserves eleven articulations of the thorax and the pygidium. The upper articulations are imperfect at their extremities; the last one is bent abruptly downwards, and terminates in a long spine on each side reaching below the pygidium. Pygidium semioval; the axis marked by four annulations, the two upper of which are faintly indicated in the lateral lobes.

This species differs from the preceding in its proportionally narrower form, the relative proportions of the parts of the head, and the short acute posterior spines. The comparative width of the middle and lateral lobes of the thorax is a very distinguishing feature.

Geological position. In the shales of the upper part of the Hudson-river group.

Peltura (Olenus) holopyga (n. s.).

Entire form elongate subelliptical, having a length of about twice and a half the width. Head somewhat semielliptical; the posterior angles produced in long spines. Glabella strongly lobed, its length a little greater than its greatest breadth; the entire breadth of the head, when entire, being about twice as great as the length. Hypostoma wider than long.

Thorax with eleven articulations; the middle lobe prominent, and about twice as wide as the lateral lobes; the articulations strong, rounded above, and each one marked in the centre by a node (or the base of a spine which has been broken off in the specimens examined). Articulations of the lateral lobes short (the extremities of the upper ones broken off in the specimen); the lower ones bending abruptly downwards, and terminating in spiniform processes, the last pair being prolonged much beyond the extremity of the pygidium.

Pygidium longitudinally semielliptical; the middle lobe marked by three annulations, and a fourth obscure one above the terminal lobe: lateral lobes flat and plain, the exterior margin apparently free from ornament or inequality.

The specimen from which the description and figure have been made is imperfect, in the absence of the cheeks with the posterior spines and frontal limb. These parts, with the hypostoma attached, lie upon the stone a little in advance and turned to one side of the head of the specimen, and have been drawn in their proper relations, but not attached to the head. That this portion of a trilobite belongs to the one figured, can scarcely admit of doubt; but in the absence of an entire head, which would warrant the restoration, I have given the figure as it occurs on the stone, with merely a change of the relation of the two parts. It is not proved, from this specimen, that the third articulation from the head may not have extended beyond the others, as shown in the two preceding species.

This species appears to belong to the Genus Peltura, taking the figures of *Olenus* (*Peltura*) *scarabæoides* as the type of the genus*. Our specimen

* This species, the *Entomostracites scarabæoides* of Wahlenberg, 1821 (*scarabæorum vel aliorum vaginipennium animale vestigia*: Bromel in Act. Litt. Upsal. 1729),

differs from that one in the absence of the obscure crenulations or inequalities upon the limb of the pygidium, which is regarded by Pictet as important. The number of segments of the thorax, if a constant character, seems much more important, and furnishes a more marked feature for the separation from Olenus.

Geological position. In the shales of the Hudson-river group.

Note. In addition to the evidence heretofore possessed regarding the position of the shales containing the Trilobites, I have the testimony of Sir W. E. Logan that the shales of this locality are in the upper part of the Hudson-river group, or forming a part of a series of strata which he is inclined to rank as a distinct group above the Hudson-river proper. It would be quite superfluous for me to add one word in support of the opinion of the most able stratigraphical geologist of the American continent.

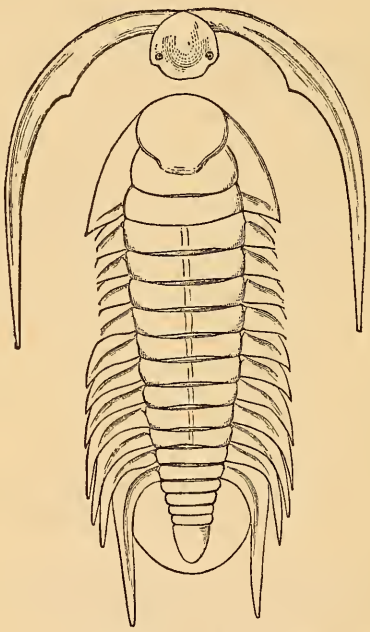

Fig. 3. Peltura holopyga.

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has apparently been refigured from the same specimen, or from the same figure throughout, by subsequent authors; and the original appears to have been deprived of the cheeks, the frontal limb, and the posterior cephalic spines. The eye-tubercle, or the palpebral lobe, having collapsed as in our specimen, gives but a partial representation of the entire animal.